CLAIMS

What is claimed is:

1. A clock shared by two or more nodes via a data transmission, wherein the data transmission includes a plurality of data packets, each data packet having a header containing a value, the clock comprising:

a first timing portion including at least two data packets wherein the value is constant for each data packet in the first timing portion; and

a second timing portion including at least two data packets wherein the value is constant for each data packet in the second timing portion and different from the value for each data packet in the first timing portion.

2. The clock of claim 1, further comprising a third timing portion including at least two data packets wherein the value changes with each data packet.

3. The clock of claim 2, wherein the value of one of the data packets of the third timing portion is unique among all the values of all the timing portions.

4. The clock of claim 2, wherein the value increments for each data packet within the third timing portion.

5. The clock of claim 1, wherein the value increments between the first timing portion and the second timing portion.

6. The clock of claim 1, wherein the value is provided by a counter within the header.

7. The clock of claim 1, wherein the data transmission is in MPEG format and a counter within the header of each MPEG data packet provides the value.

8. The clock of claim 7, wherein the counter within the header is a modified continuity counter.

9. The clock of claim 1, wherein a frame synchronization value defines the boundaries of the first timing portion and the second timing portion.

10. The clock of claim 1 further comprising a plurality of time segments each including at least the first timing portion and the second timing portion.

11. A clock shared by two or more nodes via a data transmission, wherein the data transmission includes a plurality of data packets, each data packet having a header containing a value, the clock comprising:

a first timing portion including at least two data packets wherein the value changes with each data packet in the first timing portion; and

one or more subsequent timing portions each including at least two data packets wherein the value is constant for each data packet within a subsequent timing portion and changes with each of the one or more subsequent timing portions.

12. The clock of claim 11, wherein the value of one of the data packets of the first timing portion is unique among all the values of all the timing portions.

13. The clock of claim 11, wherein the value increments for each data packet within the first timing portion.

14. The clock of claim 11, wherein the value increments from one subsequent timing portion to the next.

15. The clock of claim 11, wherein a frame synchronization value defines the boundaries between each of the timing portions.

16. The clock of claim 11 further comprising a plurality of time segments each including the first timing portion and the one or more subsequent timing portions.

17. The clock of claim 16, wherein the number of the one or more subsequent timing portions is variable among the plurality of time segments.

18. A method of time-synchronization between two or more nodes via a clock embedded within a data communication, wherein the clock is provided by at least one time segment each having a plurality of timing portions, each timing portion including two or more data packets, each data packet having a header containing a value that changes with each timing portion, the method comprising:

receiving a data packet;

reading the value within the header of the data packet;

comparing the value with at least one previous value from at least one previous data packet to provide a result; and

determining the position of the clock based on the result of the comparison.

19. The method of time-synchronization of claim 18 further comprising:

determining the position of the clock based on a value that is unique among all the values of all the timing portions.

20. The method of time-synchronization of claim 18 further comprising:

updating at least one counter within a node upon receipt of each subsequent data packet, wherein the at least one counter reflects the position of the clock.

21. The method of time-synchronization of claim 18 further comprising:

updating at least one counter within a node for receipt of each time segment.

22. A method of time-synchronization between two or more nodes via a clock embedded within a data communication, wherein the clock is provided by at least one time segment including two or more data packets, each data packet having a header containing a value that changes with each data packet, the method comprising:

receiving information on the length of the at least one time segment;

determining the boundary of each time segment based on the information;

receiving a first data packet;

reading a first value within the header of the first data packet;

determining the position of the clock based on the first value; and

updating at least one counter within a node upon receipt of a second data packet without reading a second value within the header of the second data packet.

23. The method of time-synchronization of claim 22 further comprising:

receiving a third data packet;

reading a third value within the header of the third data packet if the third data packet is near the boundary of the time segment; and

resetting the at least one counter upon crossing the boundary of the time segment.